

E911 Voice Over Internet Protocol Call Taker Equipment Requirements

Woodbury County Mobile Communications Unit

Response Due:

1:00 PM
October 29th, 2010
Woodbury County Board of Supervisors
620 Douglas Street
Sioux City, Iowa 51101

Must be clearly labeled:

Phone System bid for Woodbury County
Emergency Services

Bid Opening:

Woodbury County Board of Supervisors Regular Meeting
November 2nd, 2010 or (next scheduled regular meeting)
Time: "will be stated on Boards agenda"

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Project Background:

Woodbury County currently has a 40 foot Mobile Communications Center, with 4 communications operator positions. Woodbury County Emergency Services has been approved by the State of Iowa to purchase a VOIP 911 system for the Mobile Communications Center as a part of the State of Iowa's disaster recovery plans. It is the intent of this bid to include a quantity of four (4) 9-1-1 positions including VOIP, four (4) Phase 1 and 2 Wireless trunks and for (4) landline trunks, with Ten (10) administrative lines. With this project being funded with federal grant funds all bidders need to be aware that the State of Iowa Homeland Security as the administrator of these funds will be the deciding factor if there are enough funds for the project prior to awarding a contract.

Project Procurement Agency: Woodbury County Disaster and Emergency Services with funds passed through from the State of Iowa Department of Homeland Security.

Bid must provide as page 2 the bid pricing showing, system costs, installation costs, warranty costs, maintenance costs, with a total project cost, there will be no hidden costs within the provided bid.

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IP CAPABLE EMERGENCY CALL TAKING BID SPECIFICATION

1. GENERAL REQUIREMENTS

SCOPE

These specifications define the minimum requirements and standards for an IP Capable Emergency 911 Phone System and related accessories for Woodbury County Disaster and Emergency Services.

QUALITY

Proposed equipment shall meet or exceed industry standards for quality and reliability. All materials, parts, assemblies, etc. shall be new, and be free of corrosion, blemishes or other cosmetic defects. Design and construction shall be consistent with current best engineering practices. Manufacturer quality procedures and process shall be certified under ISO 9001:2000 Quality Management System requirements.

REGULATORY APPROVALS

All equipment proposed in which microprocessors are used shall have undergone comprehensive testing and shall meet 47 CFR, Part 15, Subpart "B" of the Federal Communications Commission rules for Class "A" computing devices.

All proposed equipment which has Telco ports shall have undergone comprehensive testing and shall meet 47 CFR, Part 68.

The emergency call taking system must also be in compliance with; EIA/TIA RS-310, 574, TIA/EIA-825; Bell Core TA-NPL-00912, TR-NWT-000030 & 001188, TR-TSY-000064 & 000350; NENA 04-001, 04-002, 03-002, 02-010, 08-001, 58-001, 08-501; ANSI/TIA/EIA 574, 825.

WARRANTY

Bidder shall warranty all equipment to be free of defects in material and workmanship, and to operate in accordance with these specifications for a period not less than one year from date of shipment in compliance to the NENA Generic Standards for E 9-1-1 PSAP Equipment (NENA-04-001). This warranty shall cover all parts and factory labor. **Additional five (5) years of warranty shall be offered as an option.**

MAINTENANCE CONTRACT

The Mobile Communications center is not operated on a daily basis and being part of the State of Iowa's disaster recovery plans the vendor must be able to perform the following services:

Maintenance contract for a 5 year period

Test the equipment once every quarter during the 5 year contract to assure its readiness. Be able to provide testing procedures within this bid to show how this will be accomplished.

Within the 5 year contract be able to respond anywhere in the State of Iowa in a twelve 12 hour response window to make connections and program system to operate on the communities 911 system. Vendor is to bill mileage and hourly rate invoice at time of incident, mileage rate and hourly rate is to be listed on this bid.

REPLACEMENT PART AVAILABILITY

The manufacture of the proposed emergency call taking system shall maintain of complete stock of repair components for the system for a period of not less than seven (7) years after initial delivery. These parts shall be available for shipment on an expedited basis 24 hours a day, 365 days a year including weekends and holidays.

DOCUMENTATION

Complete documentation shall be provided with the system. Each emergency call taking system shall include, at a minimum, manuals that address the following functions or activities:

- Installation
- Service
- Programming
- Operation

2. SYSTEM REQUIREMENTS

SYSTEM ARCHITECTURE

VoIP Call Taking System

The system shall be a VoIP capable telephone system. The system shall permit flexible line-vs.-station assignments with unique line appearances on specific stations up to a "squared" configuration where every line appears on every station set. The system shall integrate an E9-1-1 ANI/ALI Controller with the telephone system such that the system may be directly interfaced to the 9-1-1 network. The system shall accept standard 9-1-1 trunks, 7-digit emergency lines, caller ID lines, wireless Phase 1 or 2, or, if the PSAP has service from a VoIP provider, VoIP administrative calls. E9-1-1 calls can be delivered over CAMA or Enhanced MF trunks. Seven-digit emergency or caller ID lines can be provisioned at the system with FXO, T1, or T1 PRI circuits, or over an IP network designed for voice.

The system shall have the added capability of integrating administrative and ring down lines such that each station (operator's console) handles both emergency and administrative calls. The system shall enable the call-taker to answer the call with a mouse, keyboard, touch screen, or a 9-1-1 telephone set available to plug into the workstation, which is available to provide redundancy in case of PC failure. Architecture must provide the facility for full MIS reporting of administration lines and 9-1-1 trunks. The system shall be able to integrate with an optional SIP-based PSAP administrative telephone system.

The system introduces the ability to deliver calls between similar equipment in geographically dispersed Public Safety Answering Points (PSAPs) over an IP network. When doing so, the receiving call-taker is presented with the call priority (i.e. 9-1-1 emergency or administrative), the Automatic Location Information (ALI), the Automatic Number Identification (ANI), and the identifier of the original PSAP to which the call was received.

The system shall support remote operator positions/stations with IP network connectivity to the main PSAP CPE (Customer Premise Equipment).

Backroom Equipment

The backroom equipment shall be comprised of card shelves, cards (line, trunk, station, etc.), ALI Controller, IP Call Servers, and power supplies. All equipment will be mountable in the 2 supplied single post 19" equipment racks. The system shall utilize the current cat5 cabling between the backroom equipment and each Station.

Call Taking Positions

The system shall be capable of supporting both button-based and PC-based equipment at each station. A CTI (Computer Telephony Integrated) position must have a means to answer and release 9-1-1 calls in the event the computer or IP network is disabled.

Remote Call Taking Positions

Stations can be provisioned remotely from the backroom equipment.

SYSTEM REDUNDANCY

The system must have a distributed, fault-tolerant architecture such that it meets, at a minimum, the NENA Standard 04-001 which states that a single component failure shall result in the loss of not more than half of the lines, half of the stations or any essential feature. Further, a single component failure shall not result in complete loss of ANI delivery to the answering stations. The system must also have no single point of failure that could eliminate ALI and CAD interface features. The system shall have the ability to provide N+1 power supply or equivalent so a loss of a single power supply module will not result in the loss of 9-1-1 calls or operator call handling capability.

It is required that the system be able to split individual circuits such that loss of trunk or line terminating equipment results only in the loss of those trunks or lines terminated in the equipment.

For any local CTI (Computer Telephony Integrated) stations, new and existing calls presented to the station shall not be lost and shall be able to be answered and released in the event the PC or IP network to the station is disabled.

PC Failures

Bidders must fully explain the effect on the system of any of the following failures:

- Workstation PC failure (including CPU, hard-drive, power-supply, video monitor, keyboard and mouse).
- Failure of any PC Server being bid (including CPU, hard-drive, power-supply, and LAN connectivity).
- Failure of any LAN hub or switch.
- Failure of any PC LAN connection.
- Failure (misbehavior or crash) of any PC software.

SYSTEM INTER-PSAP OPERATION OVER IP

The system shall have the capability to transfer 9-1-1, 7-digit emergency or administrative calls over a private IP network between a similarly configured PSAP without going back through the telephone central office or selective router. The priority of the call shall persist and ANI/ALI information shall be delivered with the voice and presented to the call taker at the destination PSAP.

IP Call Transfers

The system shall provide the following capabilities for IP transfer of calls:

- Ability to automatically redirect incoming 9-1-1 (with ALI), 7-digit emergency, or administrative calls, based on selectable criteria such as "no operators available" or "delayed call answer".
- Ability to automatically redirect incoming 9-1-1 (with ALI), 7-digit emergency, or administrative calls, based on setting the IP Night Service mode.
- Ability to manually transfer 9-1-1 (with ALI), 7-digit emergency, or administrative calls.
- A VPN connection between PSAPs over which the voice and data is delivered.

ALARMS & DIAGNOSTICS

The system shall continually perform diagnostics on its internal data communications. In the event of a data communications failure, the appropriate station equipment shall provide a visual warning in the form of a textual message.

SYSTEM MAINTENANCE

The system shall be easy to maintain. Backroom equipment shall have power and status indicators for each card. Options must be available to provide an alarm notification to local operating personnel and/or remote service personnel in the event of a service-affecting failure. All system wiring shall be connectorized to facilitate quick replacement and ensure minimum down-time. Service must be accomplished without the loss of more than half of the lines or stations at one time. Circuit cards shall be replaceable with power applied without affecting resources other than those contained on the replaced card. Replacement of the ALI Controller shall at no time effect basic call handling features such as answering or originating calls, voice communications or ANI decode & display.

The system shall provide dial-up or VPN remote access to allow software, firmware and configuration changes. The system shall be capable of having unique password permissions for access to configuration or maintenance functions.

RETROFITS

The system shall be field expandable. The system shall be capable of expanding station capacity to a minimum of 10 stations. The system shall be capable of expanding line capacity to a maximum of 50 lines, in no more than 10-line increments.

The system shall be field upgradeable. Software upgrades to the telephone stations and ALI controller shall be permitted by downloading into Flash EPROM, or similar technology. Disassembly for the purpose of upgrading software is not acceptable.

The system shall be field programmable. The operating configuration of the system shall be programmable via a simple-to-use 32-bit, Windows®-based computer application with graphical user interface. The programming application shall be provided by the manufacturer with the delivered system. The programming shall permit reassignment of button functions, line features, TDD messages, etc.

ENVIRONMENTAL

The entire system shall be capable of operating from 100 to 134 VAC, 57 to 63 Hz. The system shall operate over the temperature range 32° F to 100° F.

UNINTERRUPTABLE POWER SUPPLY/SURGE SUPPRESSION

The vendor must provide and install a 19" rack mounted Uninterruptable power supply system with an internet web management card capable of operating the backroom equipment for a minimum of 30 minutes. The vendor must also supply Transtector surge suppression hardware on the AC system and the Demarcation points and must be able to comply with Motorola R-56 grounding standards on all provided equipment.

INTERFACES/COMPLIANCE

Line/Trunk Capacity

The system must offer up to 50 Line/Trunk capacity when set up as one-for-one dedicated line to button relationship, greater if Dynamic Buttons are configured. The system shall support 7-digit emergency or administrative lines via FX, T1 CAS, T1 PRI circuits.

E9-1-1 Trunks

The system must be able to receive E9-1-1 calls over CAMA or Enhanced MF trunks (no need to convert). The system shall interface to a wide variety of 2-wire, reverse-battery, MF-sigaled 9-1-1 Trunks, including 7/8 digit ANI via Tandem CAMA trunks (per NENA-04-001 and Bellcore TR-TSY-000350), 10/20 digit ANI via Enhanced MF trunks (for FCC Phase I per NENA-03-002), and Direct CO trunks. Options shall exist for Direct CO trunk interfaces to support wink, wink-wink, wink-reverse, or reverse supervision. The system shall support a mixture of trunk types, including both 7/8 digit ANI and 10/20 digit ANI. The system shall support conference and transfer of 9-1-1 calls to up to 20 secondary PSAPs via Tandem trunks.

Ringdown Lines

The system shall offer the following Ringdown lines as options:

- Manual Ringdown Line
- Automatic Ringdown Line
- Station Ringdown Line

FCC Wireless 9-1-1 Phase I

The system shall be compatible with the State of Iowa Wireless 9-1-1 Phase one Call Associated Signaling (CAS), Non-Call Associated Signaling (NCAS) as well as “hybrid” methods (HCAS) of delivering both mobile handset call back number (CBN) and receiving cell site and sector information. ANI displays throughout the system must show the mobile CBN.

FCC Wireless 9-1-1 Phase II

The system shall be capable of displaying State of Iowa Phase II wireless handset location (X/Y) as received from an off-premise ALI database. Additionally, the system must provide the 911 operator the capability to select manual or automatic wireless ALI re-bidding at a touch of the screen so that calls initially delivered with Phase I ALI data can be re-queried to obtain Phase II data if it exists. The time between the initial ALI query and the second ALI query shall be programmable.

ALI Databases and Connections

The system shall interface to an on-premise or off-premise ALI database. The system shall support 8 digit ALI requests (per NENA-04-001) or 10-digit ALI requests (per NENA-03-002). ALI shall be delivered for 9-1-1 calls based on the call's ANI (for 7/8/10-digit ANI) or Pseudo ANI (for 20-digit ANI). Programming shall permit optional ALI delivery based on administrative Caller ID number. When the system is configured to interface to both 7/8-digit ANI trunks and 10/20-digit ANI trunks, it shall provide the necessary NPD/NPA conversion for proper communications with the ALI database. The ALI database interface shall contain dual, redundant ports which operate at baud rates from 1200 to 9600 baud. The request for ALI shall occur prior to call answer so as to ensure fastest possible displaying of the ALI when the call is answered. The ALI ports shall support Telco-supplied modems for communications with a remote database. There shall be a migration path that permits upgrade of the equipment to handle XML-based ALI data, compliant with NENA-02-010.

Redundant ALI Controller

There shall be an option available to provide full ALI service, including CAD port functionality, despite any single point of failure, including failure of the main ALI controller. Bidders must describe their method of recovering from any single failure that would ordinarily affect ALI or CAD functionality.

Open standard interface to CAD and Mapping applications

The Mobile Communications Center currently has no mapping or CAD however the system shall have either an accepted industry standard interface or a proprietary but open interface to CAD or Mapping applications.

Mapped ALI

The system shall have a Mapped ALI interface that supports mapping of call location in the following call states: call abandoned, call answered by another operator, call answered by this operator, call on-hold, and call released. The interface shall be supported by at least one Mapped ALI vendor which uses ESRI-based map data.

Busy Call Announcement for both emergency and non emergency line groups

The system shall roll bust 911 calls to admin lines but optionally be equipped to provide an automated announcement to 9-1-1 callers while all operator consoles are busy. The system shall have that the ability to allow the operator to listen to a previously recorded announcement and to record new announcements. The system shall allow for a minimum of to eight different messages to be pre-recorded for later selection.

Automatic TTY (Baudot or ASCII)

The system shall support TTY such that when the phone detects special TDD tones, it will automatically enter the TDD mode and begin by generating a query from the PSAP followed by display of the characters typed by the caller. The system should show if TDD is in Voice or Text (Baudot or ASCII) mode and toggles the current TDD state between Voice and Text to facilitate handling of Hearing Carry over (HCO) and Voice Carry over (VCO) calls. The system sends either predefined messages selected from the drop-down list, or messages typed by the call taker.

Instant Recall Recorder Hardware-based

The system shall have provisions for voice recording by station (rather than lines/trunks) and shall be capable of selective recording such that only designated station lines are recorded. Instant Recall Recorder – Software-based

Compatibility with Voice Recording (Call Logger).

The system shall have a standard tip and ring connection for each line in the system for connection to a call logger. The connector for the interface shall be a standard Telco connector, such as a 50 pin DIN connector.

Net clock

The system shall have a Master Clock port which accepts once-a-second time and date information in a serial RS-232 ASCII format compatible with NENA-04-002 at baud rates between 1200 and 9600 baud

CAD Port

The system shall have a CAD port that delivers ALI Data and answering station ID to an attached Computer Aided Dispatch system. The CAD port shall comply with the requirements of section 3 of NENA-04-001.

Call Detail Record (CDR) Port

The system shall have the capability to store all E9-1-1 calls and Caller ID's to a folder on the server with a new a file name for each call. The system shall also have a CDR Printer Port that outputs a complete CDR of each E9-1-1 call or Caller ID call at the end of the call, which allows supervisors the option to pull data off of the server or be able to print 9-1-1 call records. The printed and stored records and messages shall contain time stamps, enabling personnel to review the details of a particular call or other event.

Voice Over IP in native (SIP) format

The system shall have the ability to provision Session Initiation Protocol enabled telephone sets or personal computers loaded with a SIP telephone application for administrative call taking. The system shall also be able to receive SIP calls from a VoIP service provider and handle them as a normal administrative call. The system will require 2 Fortigate Firewalls, one in the Mobile Communications Center and one in Woodbury Co 911 PSAP, for connectivity into network.

STATION FEATURES

Station equipment bid shall include a telephone instrument with a personal computer running Windows® XP Pro or Windows 7 Professional. The telephone should have the capability to manage call handling in the event there is a personal computer, server, or application software problem or failure.

Computer Telephony Integrated Workstations (CTI)

Regardless of the type of attached station equipment, the position shall be capable of answering and releasing calls despite any failure of the associated CTI PC-equipment including CPU, PC power supply, video monitor, keyboard or mouse. Usage of CTI and button-based telephone sets at each position shall operate off the same console circuits in the backroom. The workstations shall operate in either a stand-alone (non-networked) or networked configuration. If a database server is required in the optional networked configuration, it shall be based on Microsoft SQL Server 2005 Express Edition or later or SQL Server 2005 or later.

Monitor

The CTI call-taking application shall not require more than a single monitor and shall require a Touch Screen LCD monitor with a minimum resolution of 1024 x 786 in pixel size and at least 17" in diagonal measurement. The application shall be capable of being operated by mouse/trackball and keyboard. The call-taking application shall not preclude the use of multiple monitors. Monitors must be installed in a secure fashion suitable to the mobile environment in which they are to be utilized.

Multi-Screen Mounting

The vendor shall also quote the cost for a multi-monitor mounting hardware. The option shall permit as many as four monitors to be mounted on a single monitor tree. Optional up to five if mapping option is chosen. . Monitors must be installed in a secure fashion suitable to the mobile environment in which they are to be utilized

Operator Logon

The System shall use operator logons to customize the CTI operation. An administrative account management tool shall allow designated users to assign permissions and privileges to each individual operator or class of operators. When an operator logs on, only controls designated by the administrator shall be enabled on their CTI screen. In addition, the system shall permit the user's own private phone list and their screen preferences (color scheme and layout) to follow them to whichever CTI they log on to.

CALL TAKING FEATURES

Call Hold

The System shall have a true "hold" feature, allowing the call taker to place any number of calls on hold at one time. The system shall display on the line button the position that placed the call on hold. Any position, based on permissions established by the administrator, can select a held call. The system shall possess a configurable hold recall timer. Parking a call on a common extension is not considered a true hold feature.

Silent Monitor

The System shall allow supervisors or operators, based on the permissions extended by the system administrator, to silently monitor active calls. There is no indication given that these calls are being monitored.

Autodial

The system shall give the call taker the ability to autodial commonly called numbers. These autodials shall be categorized, for example by hospitals, towing companies, security companies, etc., to allow for easy retrieval. When pressing an autodial, the system must automatically select an out-dial line with no need for call taker selection.

3. SYSTEM DESIGN FEATURES

PRIORITY ANSWER

Station programming shall permit the assignment of one of three line classes or priorities to each line (high, medium, low). Pressing a single button shall automatically answer the longest ringing, highest priority line.

DISTINCTIVE RINGING

Station programming shall permit the assignment of a distinctive ringing sound to each line in order to audibly distinguish one line or line class from another. There shall be a minimum of 6 distinctly different ringing tones/patterns to choose from.

RING GROUPS

Stations programming shall permit each individual line to be associated with one of eight groups of lines. Buttons shall be available to enable or disable the audible ringing for each group of lines. Call indication (ringing, display) shall be distinctive if desired. Ring group assignments must be programmable based on log in permission.

STATIC & DYNAMIC LINE VIEWS

Lines shall be viewed in a Static Line window by call groups. A Dynamic Line window shall be available to view a ringing line should its call group be toggled off. The dynamic line button will only remain in the Dynamic Line window for the duration of the call.

ANSWER BUTTON

The system shall have an “answer” button that delivers to the call taker the highest priority/oldest call.

PRE-ANSWER ANI/ALI

There shall be an option for displaying ANI, ALI and Caller ID for calls yet-to-be-answered and answered by other consoles. The option shall display the ANI/ALI or Caller ID on each line’s screen resource (button or list entry) and shall permit viewing of formatted ALI data in a rectangular ALI screen area at the operator’s discretion. In addition, when calls are answered all consoles shall be able to see the ID of the console connected to the line.

TX AMPLIFY:

The system shall allow an increase in audio transmit level for specific call at a console.

RX AMPLIFY:

The system shall allow an increase in audio receive level for specific call at a console.

HANDSET/HEADSET

Each station shall support both a handset and a headset. Both devices may be used at the same time. The station shall support devices that are carbon-compatible. A standard 4-pin modular jack shall be accessible on the front of the station for use with a handset. An optional dual-prong, knee-well mounted headset jackbox shall be available which plugs into jack on the back or inside of the station.

There shall be a button to control the receive and transmit volume level. The volume level shall return to normal as a call is released.

There shall be a button to control the transmit volume level. A minimum of three different volume levels shall be possible; normal, 6 dB amplification, and 12 dB amplification. The current volume selection shall be visually indicated. The volume level shall return to normal as a call is released. Transmit and receive volume shall be controlled independently.

There shall be a button to fully mute the transmitter of the handset or headset. There shall be a visual indication of the mute condition. The mute shall be cancelled as a call is released.

AUXILIARY INPUT/OUTPUT

An Auxiliary Input/Output option shall be offered to control general purpose input/output lines.

OPTIONAL MAPPED ALI DISPLAY

The system manufacturer shall offer an optional Mapped ALI application for their Computer Telephony Integrated Work Stations (CTI). The option shall run on the same hardware platform as the 9-1-1 call taking application. The Mapped ALI feature shall use ESRI compatible map object data as its map shape file source. The map application shall support multiple user-selectable layers and be capable of displaying roads, bodies of water, fire hydrants, landmarks, etc.

The Mapped ALI application shall locate on its map all 9-1-1 calls that contain valid ALI, including abandoned calls, ringing calls (yet-to-be-answered), calls answered by this console, calls answered by other consoles, and calls on hold. The map shall show both street address and latitude/longitude of located calls. The map display shall appear on a separate monitor attached to the same CTI as the CTI application.

It is desirable that the option shall be distributed such that its operation is not reliant on a central server so that the option continues to operate despite the loss of connection to any LAN by the CTI.

OPTIONAL SYSTEM SUMMARY

The vendor shall quote the cost for displaying system summary at all workstations. System summary shall show the percentage of resources that are available vs. in-use for all lines/trunks and consoles. It shall also display status of individual lines and individual consoles.

MANAGEMENT INFORMATION SYSTEM (MIS)

There shall be a Management Information System (MIS) which monitors call activity, displays the current system status, logs call activity to a database, and permits canned report generation. The MIS shall optionally support tracking of administrative calls as well as 9-1-1 calls. Other features of the MIS shall include, but not be limited to the following:

- Real-time tracking of abandoned 9-1-1 calls.
- A summary of statistics by day.
- The ability to search logged data for specific events.
- The ability to graphically compare system usage by hour, shift, day, week, month or year.

The MIS application shall support call statistic reports for individual users.

The MIS application shall run on a Windows® XP Pro or a Windows 7 Pro platform.

CABELING

The vendor shall install the following cables from the equipment room in the Mobile Communications Center to the underneath cargo cabinet on the Passenger side below the equipment room. Vendor is responsible for making access points into the cabinet from the equipment room and for weather protected external cable connections to be possible while still allowing cargo door to be closed during cable connection.

- 1- 25 pair 24 AWG CAT3 PVC Jacketed telephone cable are to be terminated with an Amphenol connection to lightning protected Motorola 66 block, provided by customer in the underneath cargo cabinet. The equipment end of the cable is to be terminated behind the 911 racks on the wall with a standard 66 split block provided by vendor for cable termination. The 66 block is to be grounded back to the existing lightning grounding system in the equipment room with a #6 AWG stranded copper jacketed grounding cable.
- 1- 25 pair 24 AWG CAT3 PVC Jacketed telephone cable are to be terminated to 66 block with RJ-11 telephone modular jacks built in the block, for external telephone extension connections, provided by vendor. The equipment end of the cable is to be terminated behind the 911 racks on the wall with a standard 66 split block provided by vendor for cable termination.
- 4- CAT5 E cables terminated on both ends for data connectivity

Vendor is to provide 1- 200 foot 25 pair 24 AWG CAT3 PVC Jacketed telephone cable with Amphenol connections on each end of the cable; cable is to be supplied on steel cable management spool that will allow the Mobile Communications Demarcation point "Motorola 66 Block" to be connected and the cable to be spooled out to an external Demarcation point. Vendor is to supply 1- 20 foot 25 pair 24 AWG CAT3 PVC Jacketed telephone cable with Amphenol connection on one end to use as a punch down pig tail at the external connection point.

APPENDIX A: SUMMARY OF SYSTEM REQUIREMENTS

- 4- 911 Call taker positions
- 4- 17" touch screen monitors
- 10- Digital/Analog Desk sets
- 4- Wireless 911 Trunks
- 4- Wire line 911 Trunks
- 10- Analog ports
- 10- Analog Station ports
- 1- 19 "rack mountable Uninterruptable Power supply for system with network monitoring
- 1- Net clock GPS clocking system (Optional costs)
- 1- Printer for system call reporting, TDD
- 1- Management Info system
- 4- Work Station handsets
- 4- Headset jack boxes integrated into Zetron Radio console
- 4- Headsets
- 4-Optional Mapping Displays
- 2-Fortigate Firewalls
- 1- Surge Suppression System